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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,720	01/10/2007	Patrick Moireau	294251US0PCT	1968
22850	7590	12/27/2010	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			GRAY, JILL M	
			ART UNIT	PAPER NUMBER
			1798	
			NOTIFICATION DATE	DELIVERY MODE
			12/27/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/588,720

Applicant(s)

MOIREAU ET AL.

Examiner

Jill Gray

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 9-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 17, 2010 has been entered.

2. Pursuant to the entry of the amendment of November 17, 2010, the status of the claims is as follows: Claims 1-2, 4-7 and 9-20 are pending. Claims 1, 4, and 9 are amended.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-7 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al., 4,090,984 (Lin) in view of Miller 6,086,791 and Litant, 3,406,126.

#### **Regarding Independent claims 1 and 9**

Lin discloses a glass strand or glass strand structure coated with an electrically conducting coating composition. Said composition comprises about 40 to about 80% by wt of a film-forming agent, 1-5% by wt of a surfactant, and 20 to 40% by wt of carbon black (electrically conducting particles). See entire document, and for example column 1, lines 60-63, column 2, lines 32-35, and column 3, lines 15-18. In addition, Lin

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discloses that any suitable conductive carbon black dispersion can be used, further teaching various commercially available conductive carbon blacks. See column 2, lines 3-22. Lin also teaches that the composition can be applied to the glass fibers using any suitable process such as a dipping process and drying. Note column 3, lines 44-54.

Lin does not teach that his composition contains 44 to 75% of electrically conducting particles wherein at least 15% of the particles have a flake or needle shape.

Miller teaches electrically conductive coatings comprising carbon or graphite flakes having a particle size of about  $5\mu$  to about  $500\mu$ . See entire document, and for example, abstract. Moreover, Miller teaches that flake-like carbon pigments can be highly conductive, moderately conductive and even non-conductive, and that conventional carbon is spherical, shell-like, needle-like, or fiber-like. See column 3, lines 25-30. Miller also teaches that commercially available carbon black pigments include "PRINTEX XE-2" carbon pigment which is carbon black pigment having a flake-like structure. See column 5. In addition, Miller teaches that suitable resins include acrylics. See column 3, lines 5—65.

Litant teaches the formation of electrical conductors, and that prior art plastics materials for insulation contained carbon or graphite granules in the form of either discrete particles or flakes. See column 1, lines 50-55.

As set forth above, Lin teaches that his composition contains about 20 to about 40 parts per 100 parts by weight of carbon black particles. It is the position of the examiner that the term "about 40" would include amounts of carbon black particles both less than 40 wt% and greater than 40 wt %. Hence, the teaching of "about 40 parts per

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100 parts by weight” is sufficiently close to the present claimed 44% by weight so as to render obvious this amount. Moreover, it is also the examiner’s position that a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

As to at least 15% of the conductive particles having a flake or needle shape, Litant teaches the formation of electrical conductors, further teaching that in prior art examples, the plastics materials are loaded with graphite or carbon granules in the form of either discrete particles or flakes. See column 1, lines 50-55. This teaching clearly suggests that the usage of electrically conductive particles in either flake or particle form to form an electrical conductor is known in the art. Miller teaches the desirability of forming conductive compositions using conductive particles in the form of flakes. In particular, he teaches that flake-like carbon particles can be highly conductive and that typically the more flake-like carbon pigment present, the more conductive the coating is. See column 3, lines 25-30 and 38-45. Miller also teaches that suitable carbon black pigments include “PRINTEX EX-2” which has a flake-like structure. See column 5, lines 5-20.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Lin by including at least 15% of conductive carbon black having a flake-like shape (note Table 1 of Miller), with

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reasonable expectation of forming a semi-conductive coating having enhanced conductivity, motivated by the teachings of Litant and Miller.

As to the specific type of polymer, Lin further discloses that the film-forming agent can be a polyacrylic polymer, such as polyacrylate (see column 1, lines 39-59) and Miller teaches that acrylic resins are suitable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an acrylic resin with the reasonable expectation of success. This teaching would render obvious the polyacrylic resin of the present claims.

Regarding dependent claims 2, 4-7 and 10-20

As to claims 2,

As to claim 4, Lin further discloses that his surfactant can be nonylphenoxy polyethyleneoxy ethanol. See column 3, lines 10-15.

As to claim 5, Lin discloses that the conducting particles can be carbon black. See column 2, lines 3-5.

As to claim 6, Lin discloses a particle size that does not exceed 250µm. See column 2, line 20.

As to claims 7 and 11, Miller teaches that particles having a particle size that does not exceed 250µm can be used. Since Miller teaches the usage of particles within the present claimed particle size, the examiner has reason to believe that properties such as the aspect ratio are within the claimed range as well. Furthermore, it is the examiner's position that where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the

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claimed relative dimension, would not perform differently than the prior art device, the claimed device was not patentable distinct from the prior art device. See MPEP 2144.04. Accordingly, the requirements of present claims 7 and 11 are not construed to be a matter of invention in the absence of factual evidence to the contrary.

As to claims 10 and 16, the prior art composition is the same as or substantially similar to the composition of the present claims. Products of the same composition cannot have mutually exclusive properties. A chemical composition and its properties are inseparable. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562, F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicants has the burden of showing that they are not.

*In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Accordingly, the examiner has reason to believe that the composition of the prior art exhibits a viscosity that is essentially as claimed by applicants in the absence of factual evidence to the contrary.

As to claims 12-14, claim 12 is dependent upon product claim 1. Hence, claims 12-14 are product-by-process claims, wherein patentability is based upon the product itself and not the process of making said product. [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of

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production. If the product in the product-by-process is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 21136. Nonetheless, Lin discloses a process for preparing the glass strand or structure that comprises coating a glass strand or structure with said composition and heating at a temperature sufficient to remove the water. See column Example II. The dried coating is inherently strengthened. As to claim 13, Lin discloses that the glass strand can be coated by a dipping process. This teaching renders obvious the required coating by immersion in a bath of the composition. See column 3, lines 47-49. As to claim 14, agreeably Lin discloses a temperature range higher than that contemplated by applicants. However, it is noted that Miller teaches that his coating can be air dried or heated to a temperature of 200°F (93.3°C). These teachings suggest that the determination of optimum temperature for removing the solvent can be determined during routine experimentation commensurate. Accordingly, the examiner's position remains that normally a change in temperature would be an unpatentable modification, unless these changes impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different from the prior art. It is not evident on this record that the present claimed temperature range is critical. Moreover, Lin discloses the general conditions of the process of 12. Hence, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 105 USPQ 233 (CCPA 1955).



As to claim 15, Lin discloses that the glass strand can be formed into an assemblage of intertwined strands. See column 3, lines 45-55.

As to claim 17, Lin discloses that the coated glass roving can be overcoated with a matrix material. See column 3, lines 45-46. This teaching renders obvious the requirement of present claim 17.

As to claim 18, Lin teaches a matrix material overbraid of glass fibers strands, but does not teach a thermoplastic or thermosetting polymer or cementing material.

In this regard, it would have been obvious to the skilled artisan at the time the invention was made to modify the matrix overbraid by using other high strength, high heat resistant fibrous material such as ultra high molecular weight polyethylene or "KEVLAR" with the reasonable expectation of success of producing an electrical cable having high heat resistance.

As to claims 19 and 20, Miller teaches that amounts of the flake-like carbon pigments can be as little as 1 wt% and amount up to 75 wt% can be envisioned, depending upon intended use and other factors. See column 3, lines 38-43. This teaching would have provided motivation to the skilled artisan at the time the invention was made to modify the teachings of Lin by increasing the amount of electrically conductive particles to amounts within the present claimed range.

Therefore, the combined teachings of Lin, Litant and Miller would have rendered obvious the invention as claimed in present claims 1-7 and 9-20.

***Response to Arguments***

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5. Applicant's arguments filed October 17, 2010 have been fully considered but they are not persuasive.

Applicants arguments regarding the polyacrylic resin have been noted and addressed above in the office action.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 10:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jill Gray/  
Primary Examiner  
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